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Thermodynamics of the hydrogen bonding of nitrogen-containing cyclic and aromatic compounds with proton donors: The structure-property relationship

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Abstract

© 2014 Pleiades Publishing, Ltd. Enthalpies of dissolution are measured at infinite dilution of nitrogen-containing cyclic (pyrrolidine, piperidine) and aromatic compounds (aniline, N-methylaniline, N,N-dimethylaniline, N-methylimidazole, pyridine, 2-, 3-, 4-methylpyridine, pyrrole, N-methylpyrrole) in chloroform and dichloromethane, and vice versa (T = 298.15 K). The enthalpies of hydrogen bonds in the above systems are calculated. Relationships between resulting thermochemical data and the structure of nitrogen-containing cyclic and aromatic compounds are explored.

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Keywords

chloroform, dichloromethane, enthalpy of dissolution, hydrogen bonds, nitrogen-containing compounds, reorganization, solvation